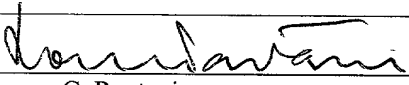


JC10 Rec'd PCT/PTO 11 MAR 2002

FORM PTO-1390 (REV 10-94)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		DOCKET #: 4211-10PUS	
<p align="center">TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371</p>					
				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 107070839	
INTERNATIONAL APPLICATION NO. PCT/EP00/09140		INTERNATIONAL FILING DATE 19 September 2000		PRIORITY DATE CLAIMED 23 September 1999	
TITLE OF INVENTION <p align="center">Enameled, Optically Brightened Printing Paper and Method for the Production Thereof</p>					
APPLICANT(S) FOR DO/EO/US <p align="center">Hubertus BURKHARDT</p>					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371 3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). 4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> has been transmitted by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US) 6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). 7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). b. <input type="checkbox"/> have been transmitted by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input checked="" type="checkbox"/> An executed oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 					
Items 11. to 16. Below concern other document(s) or information included:					
11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.					
12. <input checked="" type="checkbox"/> An executed assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.					
13. <input checked="" type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.					
14. <input type="checkbox"/> A substitute specification.					
15. <input type="checkbox"/> A change of power of attorney and/or address letter.					
16. <input checked="" type="checkbox"/> Other items or information (<i>specify</i>): PCT Publication Sheet, Int'l Preliminary Examination Report, Written Opinion, Int'l Search Report, PCT Request, PCT Demand - Chapter II					

JC13 Rec'd PCT/PTO 11 MAR 2002

U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.5) 10/070839		INTERNATIONAL APPLICATION NO. PCT/EP00/09140		ATTORNEY'S DOCKET NUMBER 4211-10PUS	
*17.[x]The following fees are submitted:					
Basic National Fee (37 CFR 1.492(a)(1)-(5)): Search Report has been prepared by the EPO or JPO\$890.00 International preliminary examination fee paid to USPTO (37 CFR 1.482).....\$710.00 No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).....\$740.00 Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$1040.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4)\$100.00					
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$	890
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	-0-
Claims	Number Filed	Number Extra	Rate		
Total Claims	10 - 20 =	0	x \$18.00	\$	-0-
Independent Claims	2 - 3 =	0	x \$84.00	\$	-0-
Multiple dependent claim(s) (if applicable)			+ \$280.00	\$	-0-
TOTAL OF ABOVE CALCULATIONS =				\$	890
Reduction of 1/2 for filing by small entity, if applicable.				\$	-0-
SUBTOTAL =				\$	890
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	-0-
TOTAL NATIONAL FEE =				\$	890
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by the appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				\$	40
TOTAL FEES ENCLOSED					\$930
Amount to be refunded:				\$	
charged:				\$	
a. [x] Two checks in the amount of \$ 890.00 and \$ 40.00 to cover the above fees are enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. 03-2412 in the amount of \$_____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. [x] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 03-2412. A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO: <u>Thomas C. Pontani</u> Cohen, Pontani, Lieberman & Pavane 551 Fifth Avenue, Suite 1210 New York, New York 10176			 <u>Thomas C. Pontani</u> Registration Number: 29,763 March 11, 2002 Tel: (212) 687-2770		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re National Phase PCT Application of

Hubertus BURKHARDT

Int'l PCT Appln. No.: PCT/EP00/09140

Int'l Filing Date: 19 September 2000

For: Enameled, Optically Brightened
Printing Paper and Method for the
Production Thereof

Check box if applicable:

☐ DUPLICATE

**GENERAL AUTHORIZATION FOR PAYMENT OF FEES
AND PETITIONS FOR EXTENSIONS OF TIME**

Submit an original and a duplicate for fee processing

Assistant Commissioner for Patents

BOX PCT

Washington, DC 20231

Sir:

The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit
Account No. 03-2412

- ☒ Any filing fees required under 37 CFR §1.16.
- ☒ Any patent application processing fees under 37 CFR §1.17 not otherwise paid by check.
- ☒ The issue fee set in 37 CFR 1.18 at 3 months from mailing of the Notice of Allowance, pursuant to 37 CFR 1.311 (b) provided the fee has not already been paid by check.
- ☒ Any filing fees under 37 CFR 1.16 for presentation of extra claims.

Respectfully submitted,
COHEN, PONTANI, LIEBERMAN & PAVANE

By



Thomas C. Pontani
Reg. No. 29,763
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(212) 687-2770

Dated: March 11, 2002

Attorney Docket # 4211-10PUS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re National Phase PCT Application of

Hubertus BURKHARDT

International Appln. No.: PCT/EP00/09140

International Filing Date: 19 September 2000

For: Enameled, Optically Brightened Printing Paper
and Method for the Production Thereof

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents

Washington, D.C. 20231

BOX PCT

S I R:

Prior to examination of the above-identified application please amend the application as follows:

In the Title:

Please delete the title at page 1, line 1, and insert the following title:

--Coated, Optically Brightened Printing Paper and Method for the Production Thereof--

In the Specification:

Please insert at page 1, after line 1, the following subtitles:

--BACKGROUND OF THE INVENTION

1. Field of the Invention--

Please replace the paragraph beginning at page 1, line 2, with the following rewritten paragraph:

--The invention relates to a coated, optically brightened printing paper and to a process for its production.--

Please insert at page 1, after line 5, the following subtitle:

--DESCRIPTION OF THE RELATED ART--

Please replace the paragraph beginning at page 2, line 13, with the following rewritten paragraph:

--A device for applying size suspensions, in addition to the known size press, is disclosed by DE-A-34 17 487, which corresponds to U.S. Patent No. 4,848,268, where a paper web guided around a roll is treated on the front side with coating color and on the rear side with liquid media.--

Please insert at page 4, after line 4, the following subtitle:

--SUMMARY OF THE INVENTION--

In the Claims:

Please cancel claims 1-9 and enter new claims 10-19, as follows:

--10. (New) An optically brightened printing paper comprising
a base paper having opposed sides,

a first coating layer applied to at least one side of said base paper, said coating layer comprising a pigment, a binder, and color coating supplements, said coating layer having an outer side opposite from said base paper, and

an optical brightener arranged on said outer side of said coating layer, said optical brightener comprising a derivative of diaminostilbene disulfonic acid.--

--11. (New) An optically brightened paper as in claim 10 wherein said coating layer comprises at least one pre-coat and a top coat, said optical brightener being arranged on the top coat.--

--12. (New) An optically brightened paper as in claim 10 comprising a further coating layer arranged over said first coating layer.--

--13. (New) A method for producing an optically brightened printing paper, said method comprising

providing a base paper containing at least one of chemical pulp, ground wood pulp, recycled fibers, and fillers,

coating said base paper with a color coating layer containing white pigments and binders,

drying said color coating layer by means of one of IR radiators, hot air, and cylinder contact,

applying an aqueous solution of a derivative of diaminostilbene disulfonic acid to the dried color coating layer, and

drying said aqueous solution.--

--14. (New) A method as in claim 13 wherein said aqueous solution is applied by means of a roll.--

--15. (New) A method as in claim 14 wherein said aqueous solution is applied by means of a roll dampener which applies dampening water, said aqueous solution of the derivative of diaminostilbene disulfonic acid being added to the dampening water.--

--16. (New) A method as in claim 13 wherein said aqueous solution is sprayed on using a nozzle.--

--17. (New) A method as in claim 16 wherein said aqueous solution is applied by means of a nozzle dampener which applies dampening water, said aqueous solution of the derivative of diaminostilbene disulfonic acid being added to the dampening water.--

--18. (New) A method as in claim 13 wherein said aqueous solution is applied in a coating machine.--

--19. (New) A method as in claim 13 wherein said aqueous solution, together with dampening water, is applied in a rewetting device arranged downstream of a calender.--

In the Abstract:

Please delete the Abstract and insert the "Abstract of the Disclosure" attached hereto.


REMARKS

The specification has been amended to add headings and improve grammar to place the application in better form for examination. Other changes are for consistency with other parts of the specification and do not represent new matter. Newly submitted claims are believed to comply with 35 U.S.C. §112.

Early consideration and action on the merits are solicited.

Any additional fees or charges required at this time in connection with the application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
COHEN, PONTANI, LIEBERMAN & PAVANE

By: 
Thomas C. Pontani
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New York, N.Y. 10176
(212) 687-2770

11 March 2002

Abstract of the Disclosure

A coated, optically brightened printing paper includes a coating base paper and an applied coating containing a pigment, a binder, and color coating supplements, with an optical brightener containing a derivative of diaminostilbene disulfonic acid applied to the outer side of the color coating. The coating base paper is coated with the coating layer using rollers, nozzles, blades, or scrapers, and then dried using IR radiators, hot air, or cylinder contact. An optical solution containing the optical brightener is applied to the dried coating layer and optionally dried again.

AMENDMENTS TO THE SPECIFICATION SHOWING CHANGES

In the Specification:

The paragraph beginning at page 1, line 2, has been rewritten as follows:

--The invention relates to a coated, optically brightened printing paper [according to the preamble of claim 1] and to a process for its production [according to the preamble of claim 4].--

The paragraph beginning at page 2, line 13, has been rewritten as follows:

--A device for applying size suspensions, in addition to the known size press, is disclosed by DE-A-34 17 487, which corresponds to U.S. Patent No. 4,848,268, where a paper web guided around a roll is treated on the front side with coating color and on the rear side with liquid media.--

Enameled, optically brightened printing paper and method for the production thereof

The invention relates to a coated, optically brightened printing paper according to the preamble of claim 1 and to a process for its production according to the preamble of claim 4.

Coated, optically brightened printing papers are known per se and find manifold use in higher-quality printed products, such as illustrated books, brochures and company reports. Optical brighteners are likewise known. In addition to their main field of use in the detergent industry, they have also already been used for decades in the paper industry in order to increase the brightness of the paper produced. Viewed chemically, optical brighteners are derivatives of diaminostilbene disulfonic acid. Their effect is based on the absorption of UV light in a wavelength range from 300-400 nm and emission in a blue range of visible light in the range from 400-450 nm. This leads to a shift in the yellow cast of fibers and fillers into the blue-white range and ultimately to an increase in the spectral reflectance.

The use of optical brighteners during paper making can be carried out in various ways. During the production of coated printing papers, it can be added into the fibers stock suspension upstream of the flow box of the paper machine. If the paper machine has a size press, as it is known, for the surface treatment of the paper, the optical brightener can for example be metered into the starch solution used there. A third possibility is to meter the optical brightener into a coating color which is applied to the coating base paper inside or outside the paper machine or is possibly applied to an already pre-coated coating base paper.

In Wochenblatt für Papierfabrikation No. 15, pp. 529-534 (1983), a report is given on the size-press application of optical brighteners together with a starch suspension. It has also already been proposed to divide the amount of optical brightener to base paper, size press and coating, see PTS-Vortragsband 02/91, pp. 172-175, 15th Coating Symposium 1991.

A device for applying size suspensions, in addition to the known size press, is disclosed by DE-A-34 17 487, where a paper web guided around a roll is treated on the front side with coating color and on the rear side with liquid media.

EP-A-0 373 276 describes a process and an apparatus for the continuous spraying of additives onto a moving paper web.

Coated, optically brightened papers produced in accordance with the prior art exhibit certain disadvantages. If the optical brightener is added to the fibers stock suspension upstream of the flow box or is applied to the surface of the coating base paper by means of a size press, then attenuation of the UV light and of the reflected blue light occurs as a result of the coating layer subsequently applied, so that the action of the optical brightener occurs only to an inadequate extent. Increasing the amount of additive is ruled out for cost reasons. Adding the optical brightener into the coating color to be applied is certainly possible in principle, but requires the addition of carrier substances, as they are known, since the optical brightener itself does not adhere to the pigments of the coating color and therefore, to some extent, is absorbed into the base paper together with the water from the coating color. This problem was solved by the addition of carrier substances, as they are known. These are, for example, starches, CMC and polyvinyl alcohol. Because of their anionic charge, they are capable of holding the cationically charged optical brighteners in the applied layer of coating color and bringing them into action under the influence of light.

However, the drawback with using carrier substances is their relatively high inherent viscosity in aqueous solution, which is added to the already relatively high viscosity of the coating color used.

This leads to viscosity problems when processing at high operating speeds in blade coating machines, said problems either limiting the operating speed, leading to non-uniform coating application or making it necessary to dilute the coating color, which in turn entails problems with the drying capacity of the drying equipment arranged downstream.

The object of the present invention is to provide a coated, optically brightened printing paper and a process for its production which overcomes the problems listed above.

In order to solve the problem, an optically brightened printing paper coated on one or both sides and coated once or many times is proposed, which comprises a coating base paper and a coating layer applied thereto and comprising pigment, binder and coating color aids, which is characterized in that the optical brightener is arranged on the outer side of a coating layer.

Printing paper coated on one side is understood to mean those papers which are provided only for single-sided printing. These include, for example, label papers for bottles and can wrappers. In the same sense, printing papers coated on both sides are printed on both sides. These include, for example, magazine papers, as they are known, for illustrated magazines or catalogues, but also art papers. High-value printed products require the highest surface quality of the side to be printed. This can no longer be achieved with a single coat, as it is known. For this reason, the coating base paper is firstly coated with one or two pre-coats, as they are known, and the top coat, as it is known, is arranged.

on them.

The pigments considered for the coating layer are all familiar coating pigments, such as kaolin, calcium carbonate, talc, titanium dioxide, gypsum, etc.

The binders considered for the coating layer are likewise all familiar coating color binders, such as starch, protein, casein, synthetic lattices etc. Likewise, the coating layer contains conventional coating color aids, such as defoamer, deaerator, lubricant and viscosity regulator. Pigments, binders and coating color aids are familiar to those skilled in the art and active in this field.

The arrangement of the optical brightener on the outer side of the coating layer states that said it is arranged both on the outer side of the coating layer and in the outer layer under the outer side. The porosity of the coating layer, which is always present, if appropriate even after a preceding calendering operation brings about this arrangement with the advantageous effect that the UV proportion of the light strikes the optical brightener without or only with slight attenuation and is emitted as visible blue light in the range from 400-450 nm without or with only slight attenuation as result of which the yellow cast of the fibers and pigments is shifted into the blue-white range. This ultimately leads to an increase in the spectral reflectance and to an improvement in the paper quality. With this arrangement of the optical brightener, a reduction in the amount of brightener is also possible, because of the improved efficiency, so that a reduction in costs is possible.

In a preferred embodiment of the optically brightened

printing paper, the optical brightener is arranged on the outer side of the top coat of a coating layer consisting of one or more pre-coats and a top coat. This embodiment has the advantage that no excessively high demands have to be made on the brightness quality of the pre-coat pigments, since the lower brightness of these pigments is compensated for by the whitening effect on the outer layer of the top coat. A reduction in costs is therefore possible.

In a further embodiment of the optically brightened printing paper, the optical brightener is arranged on the outer side of a first coating layer and a further coating layer without an optical brightener is arranged over that. It is known that optical brighteners are destroyed by the continuous action of UV light, and the paper grays. On the other hand, however, in specific applications of the optically brightened printing paper it is not possible to avoid said paper being continually exposed to light. This occurs, for example, in the case of illuminated advertising placards. In this case, the optical brightener arranged on a first coating layer is protected against too much UV light by the further coating layer arranged above it without losing its whitening action.

A process according to the invention for producing an optically brightened printing paper coated on one or both sides and coated once or many times is characterized by the combination of the following features:

A coating base paper, containing chemical pulp and/or groundwood pulp and/or recycled fibers and/or fillers is coated with a coating color, containing white pigments, binders and coating color aids, in a manner known per se by means of roll,

nozzle, roll doctor or blade doctor application. The coating applied is dried immediately thereafter by means of infrared radiators, hot air or cylinder contact. Here, a combination of the various drying systems with one another is also possible. An aqueous solution of a derivative of the diaminostilbene disulfonic acid is then applied to the dried top side of the coating layer and, if necessary, dried again.

In order to apply the aqueous solution, roll application devices known per se can be used. A further tried and tested application technique consists in a nozzle application of the aqueous solution. Nozzle applicators of this type are familiar to those skilled in the art.

A preferred embodiment of the process consists in the application of the aqueous solution being performed by means of a roll or nozzle moistener, as it is known, on one or both sides of the coated paper web, the solution of the derivative of the diaminostilbene disulfonic acid being added to the dampening water. This embodiment is recommended in particular when a moisture correction must be carried out on the coated paper web.

The application of the aqueous solution of the derivative of the diaminostilbene disulfonic acid can be carried out in the coating machine arranged directly downstream of the paper machine or in a separately operated coating machine. However, it is also possible to apply the aqueous solution to the calendered coating layer in a rewetting device arranged downstream of a calender, the solution of the derivative of the diaminostilbene disulfonic acid being added to the dampening water.

If the binder contained in the coating layer has carrier properties, such as starch, polyvinyl alcohol or CMC, then a purely aqueous solution of the derivative of the diaminostilbene disulfonic acid can be used for the application. However, if these carrier properties are lacking in the coating layer, then the aqueous solution has a water-soluble carrier, such as starch, CMC or polyvinyl alcohol, added to it. The required amount of optical brightener and, if appropriate, carrier can easily be determined themselves by those skilled in the art. An aqueous solution of 10% by weight of optical brightener (commercially available material) and 3% dissolved starch has been tried and tested.

Example

A woody, pre-coated paper was provided with an additional top coat with an applied weight of 8 g/m^2 . Pre-coat and top coat contained no optical brightener. The brightness of the coated paper was 75.2%. A 10% aqueous solution of an optical brightener was then applied to the top coat and dried. The absolute dry applied quantity of optical brightener was 0.32 g/m^2 commercially available product in this case. The brightness was increased to 97.1%.

Patent claims

1. An optically brightened printing paper coated on one or both sides and coated once or many times, comprising coating base paper and a coating layer applied thereto and comprising pigment, binder and color coating supplements, characterized in that the optical brightener is arranged on the outer side of a coating layer.
2. The optically brightened printing paper coated on one or both sides as claimed in claim 1, characterized in that the optical brightener is arranged on the outer side of the top coat of a coating layer consisting of one or more pre-coats and a top coat.
3. The optically brightened printing paper coated on one or both sides as claimed in claim 1, characterized in that the optical brightener is arranged on the outer side of a first coating layer and a further coating layer is arranged over that.
4. A process for producing an optically brightened printing paper coated on one or both sides and coated once or many times, characterized by the combination of the following features:
 - a coating base paper, containing chemical pulp and/or groundwood pulp and/or recycled fibers and/or fillers, is coated with a color coating containing white pigments and binders in a manner known per se by means of roll, nozzle, doctor roll or doctor blade application,

- the coating is dried by means of IR radiators, hot air or cylinder contact,
- an aqueous solution containing an optical brightener is applied to the dried top side of the coating layer and dried again.

5. The process as claimed in claim 4, characterized in that the application of the solution is performed by means of roll application.

6. The method as claimed in claim 4, characterized in that the application of the solution is performed by means of nozzle application.

7. The process as claimed in either of claims 5 and 6, characterized in that the application of the solution is performed by means of roll or nozzle dampeners, as they are known, on one or both sides, and the solution of the optical brightener is added to the dampening water.

8. The process as claimed in one of claims 4 to 7, characterized in that the application of the solution of the optical brightener is carried out in the coating machine arranged directly downstream of the paper machine or in a separately operated coating machine.

9. The process as claimed in claim 4, characterized in that the solution of the optical brightener is applied in a rewetting device arranged downstream of a calender, together with the dampening water.

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
Includes Reference to PCT International Applications

Attorney's Docket
No.4211-10PUS

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ENAMELED, OPTICALLY BRIGHTENED PRINTING PAPER AND METHOD FOR THE PRODUCTION THEREOF

the specification of which (check only one item below)

☐ is attached hereto

☐ was filed as United States application

Serial No.

on

and was amended

on _ (if applicable).

☒ was filed as PCT international application

Number PCT/EP00/09140

on 19 September 2000

and was amended under PCT Article 19

on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of the application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

PRIOR FOREIGN/PCT APPLICATIONS AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

Country (if PCT, indicate "PCT")	Application Number	Date of Filing (day, month, year)	Priority Claimed Under 35 U.S.C. 119	
Germany	199 45 580.5	23 September 1999	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
PCT	PCT/EP00/09140	19 September 2000	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO
			<input type="checkbox"/> YES	<input type="checkbox"/> NO

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS		STATUS (check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.				
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)		
PCT/EP00/09140	19 September 2000		x	

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (*List name and registration number*)

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Combined Declaration for Patent Application and Power of Attorney (Continued) (Includes Reference to PCT International Applications)			Attorney's Docket 4211-10PUS
2 0 3	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME
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	POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY
STATE & ZIP CODE/COUNTRY			
<p>I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.</p>			
SIGNATURE OF INVENTOR 201 <i>Dr. Hubertus J. Buehlert</i>		SIGNATURE OF INVENTOR 202	
SIGNATURE OF INVENTOR 203			
DATE 14.02.2002		DATE	
DATE		DATE	